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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/594,057

06/25/2007

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358362011500

8885

25227 7590 01/12/2010
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EXAMINER

JACOBSON, MICHELE LYNN

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

01/12/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/594,057	Applicant(s) KAWAI ET AL.	
	Examiner MICHELE JACOBSON	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/17/08, 6/25/07</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Double Patenting

1. Claims 1-16 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of copending Application No. 11/912978. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instantly pending application encompass the invention claimed in application 11/912978.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

2. Claims 1-6 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 of copending Application No. 10/593237. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instantly pending application are broader in scope and encompass the invention claimed in application 10/593237.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-16 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a laminate comprising a heat sealable propylene-butene copolymer layer, an intermediate α -olefin copolymer layer and a propylene homopolymer substrate layer, does not reasonably provide enablement for a laminate comprising any heat sealable layer having a melting point less than 150° C with the heat sealing energies claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

5. Case law holds that applicant's specification must be "commensurately enabling [regarding the scope of the claims]" *Ex Parte Kung*, 17 USPQ2d 1545, 1547 (Bd. Pat. App. Inter. 1990). Otherwise **undue experimentation** would be involved in determining how to practice and use applicant's invention. The test for undue experimentation as to whether or not all compounds within the scope of claims 1-16 can be used as claimed and whether claims 1-16 meet the test is stated in *Ex parte Forman*, 230 USPQ 546, 547 (Bd. Pat. App. Inter. 1986) and *In re Wands*, 8 USPQ2d 1400, 1404 (Fed.Cir. 1988). Upon applying this test to claims 1-16, it is believed that undue experimentation **would** be required because:

a. The breadth of the claims is so broad as to encompass every polymer, such as non-olefinic polymers, that is heat sealable having the materials properties claimed. However, applicant only discloses α -olefin based heat sealable layers that meet the limitations of the claim. Additionally, the scope of

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the claims is so broad as to encompass any polymer as the intermediate layer, whereas the only polymeric materials disclosed for the intermediate layer in applicant's specification are α -olefins.

b. *The quantity of experimentation necessary is **great*** since claims 1-16 read on any heat sealable polymer layer having a melting point less than 150° C and the heat sealing energies claimed while the specification discloses random copolymer or block copolymers obtained by polymerization of two or more α -olefin monomers having a carbon number 2 to 10. None of applicant's independent or dependent claims claim the identity of the heat sealable layer and instead generically claim the heat sealable layer dependent on the properties it displays. However, applicant has failed to provide guidance as to the composition of every polymer that meets the limitations regarding the properties of the polymer claimed. Therefore, it would require undue experimentation for one of ordinary skill in the art to test heat sealable polymers from every class of polymers (e.g. polyesters, polyamides) in order to determine which polymers meet the limitations of the properties of the heat sealable layer claimed.

c. In light of the above factors, it is seen that undue experimentation would be necessary to make and use the invention of claims 1-16 and therefore applicant's specification is not enabling for the full scope of the invention claimed.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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7. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 1 recites that the heat sealing energy in the MD and TD is greater than 11 N*cm/15 mm "when the film is sealed, such that the heat sealing strength of the film is not less than 8N/15 mm". However, claim 1 does not recite what the film is sealed to; therefore it would be impossible for one of ordinary skill in the art to determine the breadth and scope of claim 1 because what the film is sealed to is not specified. The heat sealing strength of any seal is dependent on the composition of surfaces being sealed together. The film could either be sealed to another surface comprising the heat seal layer, to the crystalline polypropylene substrate layer or to a different material entirely. Claim 1 only positively recites a film, but does not recite that the film is sealed to itself. Since it is unclear what surfaces are to be sealed in order to determine the heat seal energy and strength of the film, these limitations will not be considered. Appropriate clarification is required.

9. The examiner notes that applicant's explanation of heat sealing energy disclosed in the specification does not explain what is meant by the axis presented in Fig. 2 of "distance of movement in the chart". Paragraph [0036] of the pre-grant publication describes heat sealing energy as such: "The heat sealing energy can be led from the chart obtained by the measurement of the heat sealing strength. In the present invention, the area surrounded by the curve showing the heat sealing strength and the distance of movement in the chart is taken as the heat sealing energy". It is unclear

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from this statement how the determination of a value for heat sealing energy is made.

Further clarification in applicant's response is recommended.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-5, 7-10, 12 and 14-16 rejected under 35 U.S.C. 103(a) as being unpatentable over Kohyama et al. U.S. Patent No. 4,726,999 (hereafter referred to as Kohyama).

12. Kohyama teaches a laminated structure having excellent heat sealability at low temperatures and heat seal strength, a broad range of heat sealable temperatures, and also superior scratch resistance and antiblocking property. The laminated structure is disclosed to be very useful in the form of a laminate fiber or sheet, a laminated package or container, etc. in the field of packaging various products or articles including foodstuffs, apparels, daily goods and sundries (Col. 1, lines 21-27) The laminated structure disclosed comprises a substrate layer of a crystalline propylene resin and, positioned in direct contact with at least one surface thereof, a heat-sealable layer of a crystalline random propylene copolymer composition. (Col. 3, lines 60-64)

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13. The laminated structure disclosed is characterized in that the crystalline random propylene copolymer composition is a mixture of (I) and (II) indicated below in a (I)/(II) weight ratio of from 5/95 to 90/10.

I. A crystalline random propylene copolymer of a major amount of propylene with a minor amount of another alpha-olefin, and

II. a random copolymer consisting essentially of more than 60 to 99 mole % of 1-butene and less than 40 to 1 mole % of propylene.

12. The random copolymer (II) has the following characteristics (A) to (E).

A. an intrinsic viscosity $[\eta]$, determined in decalin at 135° C., of 0.5 to 6 dl/g,

B. a DSC melting point (T_m), measured by a differential scanning calorimeter, of 50° to 130° C.,

C. a degree of crystallinity, measured by X-ray diffractometry, of 5 to 60%,

D. a boiling methyl acetate-soluble content (W_1) of not more than 2% by weight based on the weight of the copolymer (II), and

E. an n-decane/acetone (1:1 by volume) mixture-soluble content (W_2) of less than $4 \times [\eta]^{-1} \cdot 2$ in % by weight based on the weight of the copolymer (II).

13. Advantageously, the copolymer (II) has a Young's modulus (J), measured by the method of JIS K-7113, of 1000 to 6000 kg/cm², preferably 1100 to 5000 kg/cm². (Col. 8, lines 40-42)

14. The substrate layer of the crystalline propylene resin constituting the laminated structure of this invention may be non-stretched or in a monoaxially or biaxially stretched state. The heat-sealable layer of the crystalline random propylene copolymer

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composition may likewise be non-stretched or in a monoaxially or biaxially stretched state. Hence, the substrate layers in the above states and the heat-sealable layers in the above states may be used in any desired combinations. (Col. 4, lines 31-39)

15. In the laminated structure of this invention, the thickness of the substrate layer can be properly selected and is, for example, from 5 to 200 μm . The thickness of the heat-sealable layer can also be properly selected, and is, for example, about 0.1 to about 50 μm , preferably about 0.5 to about 30 μm . These thicknesses may be varied properly depending upon the shape, type, etc. of the laminated structure. For example, in the case of a laminated film or sheet, the substrate layer may have a thickness of about 5 to about 200 μm , preferably about 10 to about 70 μm , and the heat-sealable layer may have a thickness of about 0.1 to about 50 μm , preferably about 0.5 to about 30 μm . (Col. 4, lines 40-52)

16. The heat seal strength when the film is sealed to itself at 130° C is disclosed to be 16.7 N/15 mm in Table 3, example 1.

17. Kohyama additionally discloses Crystalline propylene resin films or sheets have found extensive use in the field of packaging, particularly packaging of foodstuffs, because of their superiority in mechanical properties such as tensile strength, rigidity, surface hardness and impact strength, optical properties such as gloss and transparency, and food hygiene such as the freedom from toxicity and odor. They, however, have the defect that temperatures at which a single layer of such a crystalline propylene resin film can be heat-sealed are high and a proper range of these heat-sealing temperatures is narrow. (Col. 1, lines 55-65)

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18. Kohyama is silent regarding disposing an additional intermediate layer between the heat seal layer and substrate layer recited.

19. Component (II) of the heat sealable layer of Kohyama is disclosed to have high strength expressed in the values of Young's modulus (i.e. tensile modulus of elasticity) disclosed. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have duplicated the heat seal layer of Kohyama in order to provide a laminate structure with higher Young's modulus and therefore produce a tougher laminate. Such a layer would obviously be disposed between the crystalline polypropylene substrate layer and the heat seal layer disclosed by Kohyama in order to preserve the surface hardness and optical properties imparted to the exterior of a package produced from the laminate provided by the crystalline polypropylene.

20. Regarding claim 1: Such as laminate as would be produced by this obvious modification of Kohyama would have had the same composition as the laminates disclosed in applicant's specification and would therefore be naturally expected to display the same properties of tensile modulus of elasticity claimed by applicant in claim 1. Therefore, this obvious duplication of layers disclosed by Kohyama would have produced the same invention as claimed in claims 1, 3, 4, 7, 8, 12 and 14-16.

21. Regarding claim 2: The film thicknesses disclosed by Kohyama overlap or encompass the range thicknesses for the layers of the film claimed in claim 2. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990)

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22. Regarding claims 5 and 10: It would have been obvious to one having ordinary skill in the art at the time the invention was made to have mixed in some of the crystalline polypropylene resin comprising the substrate layer with the resin comprising the intermediate layer which would have been the same as that comprising the heat seal layer of Kohyama since the examiner takes official notice that it was universally known in the polymer arts at the time the invention was made that providing a mixture of the resins comprising two polymer layers to be bonded between the layers increases the adhesion of the layers. This obvious utilization of a technique well known in the art to improve the adhesion between two polymer layers would have produced the invention as claimed in claims 5 and 10.

23. Claims 6, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohyama et al. U.S. Patent No. 4,726,999 (hereafter referred to as Kohyama) and Food Packaging Technology, ed. Coles et al., CRC Publishing, 2003, pg. 318 (hereafter referred to as Coles).

24. Kohyama teaches what has been recited above but is silent regarding imparting antifog properties to the laminate disclosed.

25. Coles teaches Condensation (fogging) of water vapour on the inner surface of food packs can occur when the temperature of the pack environment is reduced, resulting in a temperature differential between the pack contents and the packaging material. Fogging of the inner surface of lidding film is a result of light scattering by the

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small droplets of condensed moisture that leads to poor product visibility and an aesthetically displeasing appearance of the pack. This can be overcome by applying antifogging agents to the plastic heat sealing layer, either as an internal additive or as an external coating. These chemicals decrease the surface energy of the packaging film which enables moisture to spread as a thin film across the under surface of the pack rather than collecting as visible droplets. Antifogging agents include fatty acid esters. Most lidding materials are available with antifog properties, and commonly treated plastics include LDPE, LLDPE, EVA and PET. (Pg. 318)

26. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have applied an antifogging agent such as disclosed by Coles to the heat seal layer of Kohyama in order to prevent fogging and its deleterious effects. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized the amount of such an additive in order to obtain the most beneficial reduction in the amount of fogging by sufficiently decreasing the surface energy of the film. Such an optimization of the amount of additive in the modified invention of Kohyama would have produced a film with the same characteristics as claimed in claims 6, 11 and 13.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE JACOBSON whose telephone number is

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(571)272-8905. The examiner can normally be reached on Monday-Thursday 8:30 AM-7 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571)272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michele L. Jacobson
Examiner /M. J./
Art Unit 1794

/Rena L. Dye/
Supervisory Patent Examiner, Art Unit 1794